Rack-Mounted | USB & Ethernet Control

10x6 Switch Matrix ZT-10X6NB

50Ω 600-6000 MHz

Product Overview

Mini-Circuits' ZT-10X6NB is a high performance, 10 by 6 non-blocking switch matrix, covering the key worldwide telecoms bands from 600 MHz to 6GHz. The system comes housed in a compact, 5U height, 19-inch rack-mountable chassis with all RF connections (N-type) easily accessible on the front panel.

This bi-directional switch matrix can be programmed to connect the 6 "B" ports to any combination of the 10 "A" ports. The non-blocking configuration makes the matrix ideally suited to a wide range of multi-user and multi-device test systems. In cellular test systems for example, the matrix would allow 6 separate test stations to access any of 10 base-station channels, without affecting any other test stations. Multiple ZT-10X6NB matrices can be combined to construct complex, high volume test environments.

The system includes both USB and Ethernet control interfaces along with a built-in touchscreen, providing a range of flexible control options. Software support is provided through our easy-to-use GUI application for remote control over a network, or local control through USB. ActiveX and .NET API objects (for Windows environments) and HTTP / Telnet support ensure compatibility with most common programming environments.

Key Features

Feature	Advantages
Non-blocking configuration	Flexible switch configurations allows the 6 "A" ports to be routed to any combination of the 10 "B" ports, including all 6 "A" ports simultaneously to the same "B" port.
Tightly controlled switch configuration	Carefully optimised switch topology and precision Engineering from design to production ensures repeatable switch performance, best correlation between insertion loss and return loss, and competitive cost.
Ethernet-TCP/IP-HTTP and Telnet Protocols (Supports DHCP and Static IP)	Remote control from any Windows®, Mac®, or Linux® computer, or even a mobile device with a network connection and Ethernet-TCP/IP (HTTP or Telnet protocols) support. Using a VPN would allow remote control from anywhere in the world.
USB HID (Human Interface Device)	Local control via USB connection. Plug-and-Play, no driver required. Compatible with Windows® or Linux® operating systems using 32 and 64 bit architectures.
Full software support	The user friendly Windows GUI (graphical user interface automation) allows manual control straight out of the box. A full API (application programming interface), programming examples and manuals are provided to allow automation in most programming environments.

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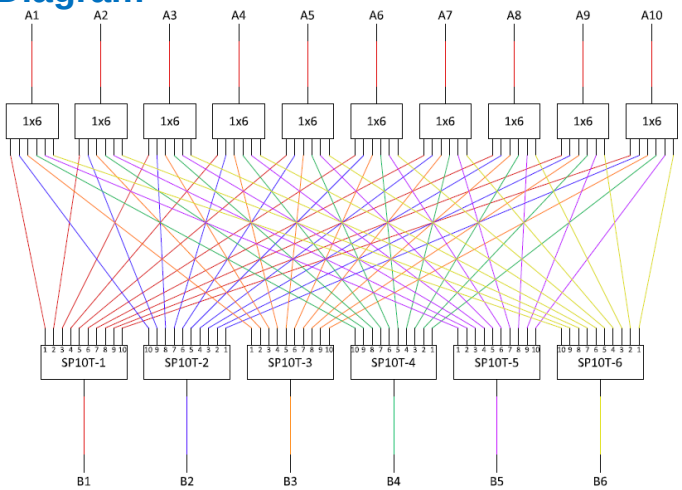
Functional Block Diagram



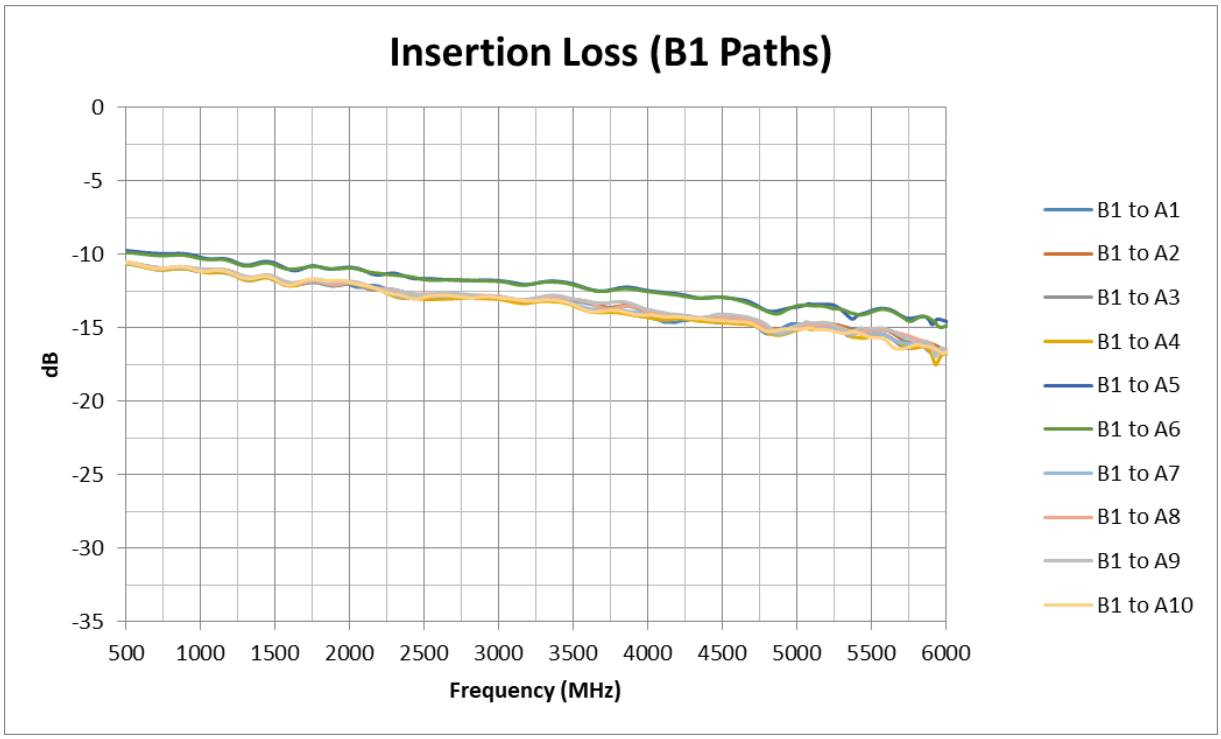
Electrical Specifications at 25°C

Parameter	Conditions	Min	Typical	Max	Unit
Frequency		600	-	6000	MHz
Path Loss	600-3000 MHz	-	14	-	dB
	3000-6000 MHz	-	18	-	
Return Loss		-	12	-	dB
Input Power	Per port into A ports	-	-	+33	dBm
	Per port into B ports	-	-	+26	
	Into any switch termination	-	-	+17	
Isolation	Between any pair of B-ports when connected to the same A-port	-	25	-	dB
	Between any pair of B-ports when connected to different A-ports	-	90	-	
	Between any pair of A-ports	-	90	-	

Mechanical Specifications

Dimensions	19” (W) x 5U (H) x 20” (D)
Case Material	Aluminum (with protective coatings to prevent corrosion)
Case Drawing	99-01-2718
RF Connectors	N-type female
Front Panel Marking	a) ZT-10X6NB b) 10X6 Non-Blocking Switch Matrix (600-6000 MHz)
Front panel	a) Power ON/OFF switch with indicator and protective cover b) 10 x N-type female RF connectors (ports A1-A10) c) Touchscreen d) 2 x removable carry handles
Rear panel	a) 6 x N-type female RF connectors (ports B1-B6) b) USB type B port for local control c) RJ45 LAN port for Ethernet control d) AC mains power supply input e) 2 x removable carry handles
Control Interface	USB, Ethernet TCP/IP (HTTP & Telnet), touchscreen
Power supply	a) AC mains power supply (90-260 V, 47-63 Hz) b) 2A, 250V fuse rating
Operating temp	5° to +45° C

Typical Performance Data



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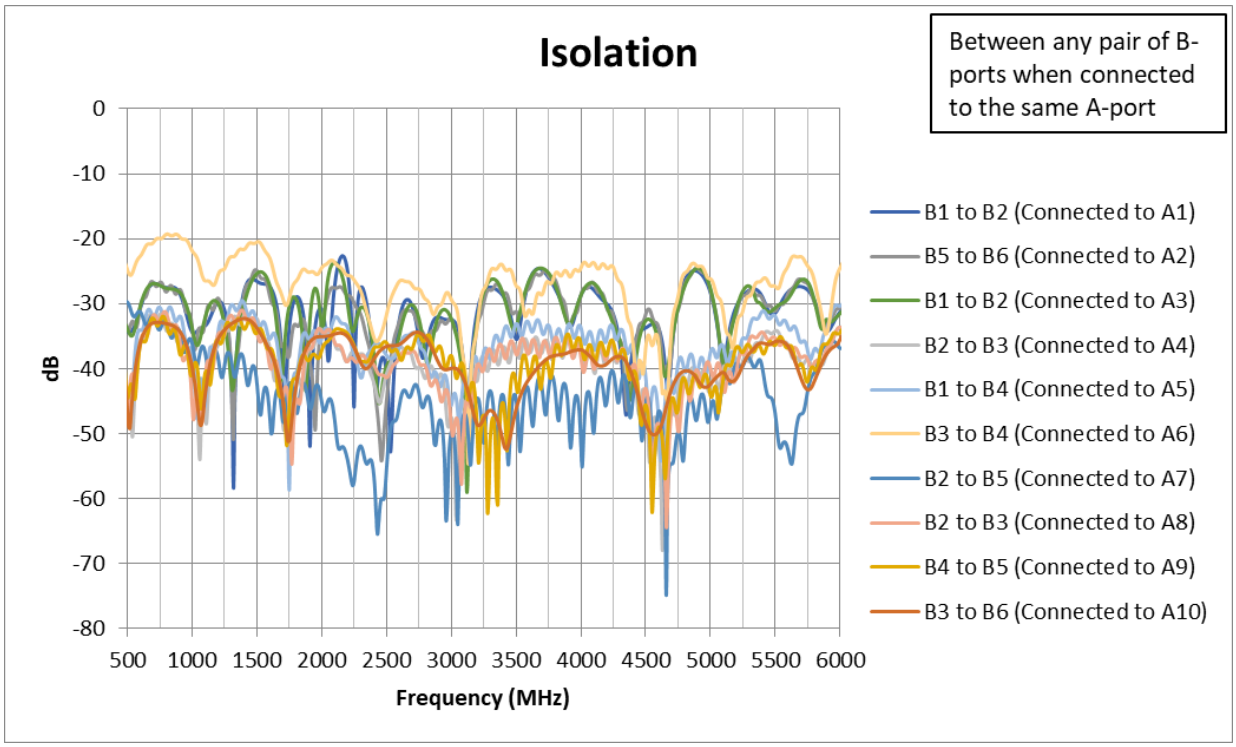

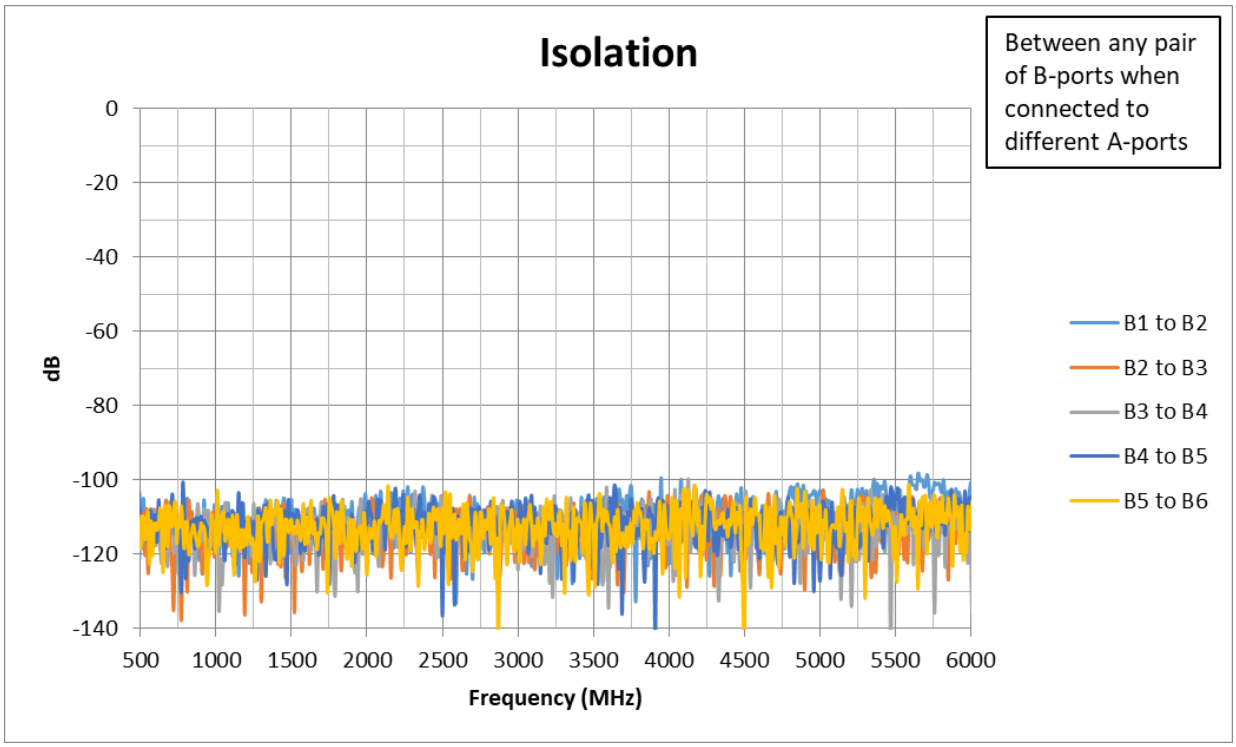

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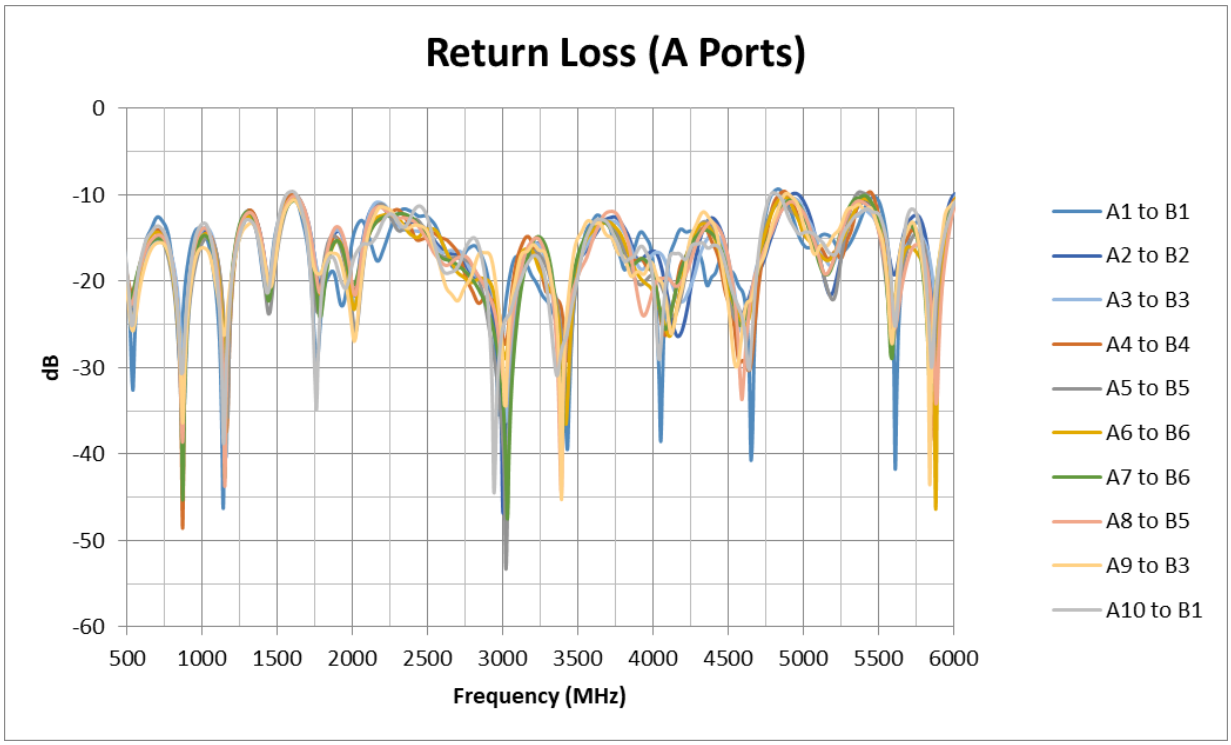
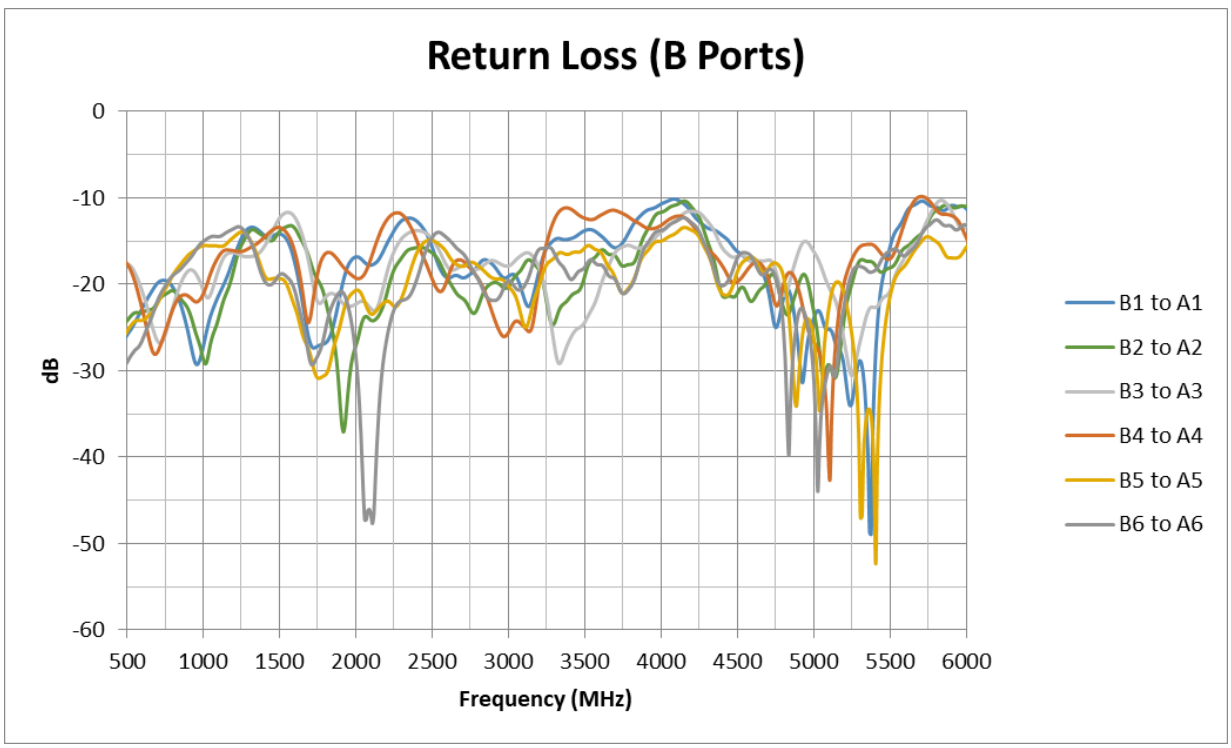




Software Specifications

Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples are available on request
- Please contact testsolutions@minicircuits.com for support

Minimum System Requirements:

Parameter	Requirements	
Interface	USB HID, Ethernet (HTTP & Telnet), Touchscreen	
System Requirements	GUI	Windows 98 or later
	USB API DLL	Windows 98 or later and programming environment with ActiveX or .NET support
	USB Direct Programming	Linux; Windows 98 or later
	Ethernet	Windows, Linux or Mac computer with a network port and Ethernet TCP / IP support
Hardware	Pentium II or later with 256 MB RAM	

Application Programming Interface (API)

Ethernet Support:
- Simple ASCII / SCPI command set for attenuator control
- Communication via HTTP or Telnet
- Supported by most common programming environments

USB Support (Windows):
- ActiveX COM DLL file for creation of 32-bit programs
- .NET library DLL file for creation of 32 / 64-bit programs
- Supported by most common programming environments (refer to application note AN-49-001 for summary of supported environments)

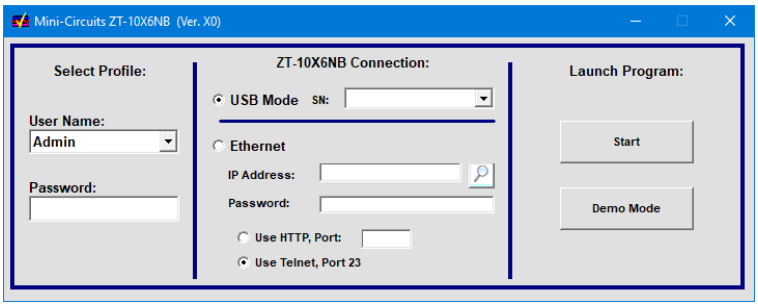
USB Support (Linux):
- Direct USB programming using a series of USB interrupt codes

Full programming instructions and examples available for a wide range of programming environments / languages.

Graphical User Interface (GUI) for Windows - Key Features

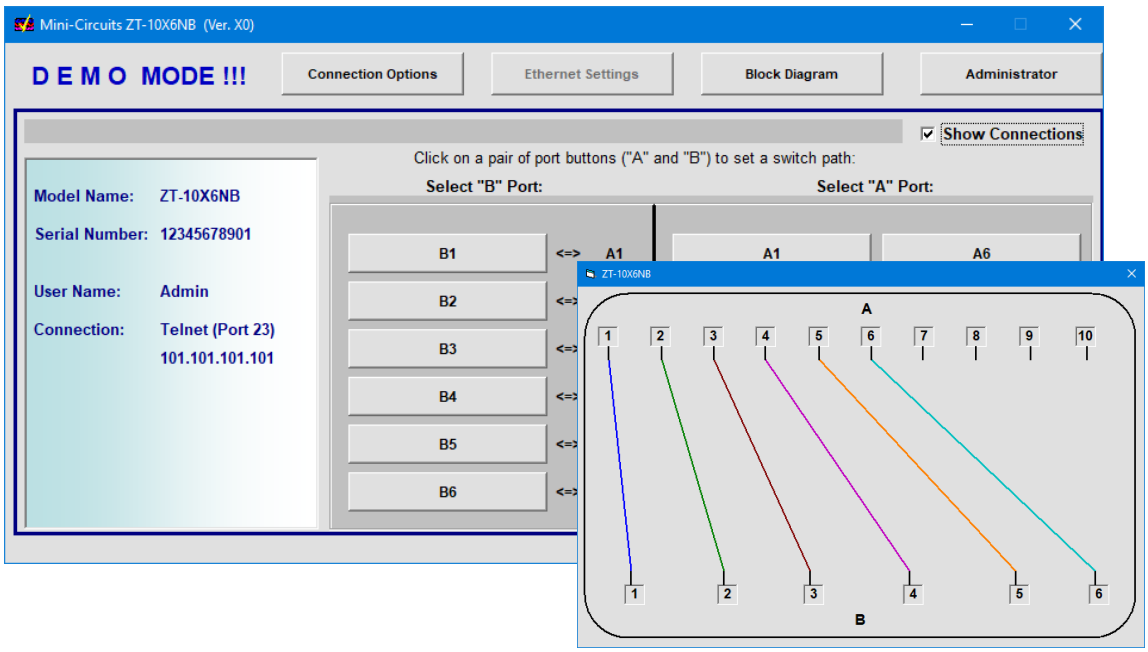
1) Launch Screen

- Log in according to pre-defined user profiles
- Connect via USB or Ethernet
- Run GUI in demo mode to configure software without a hardware connection

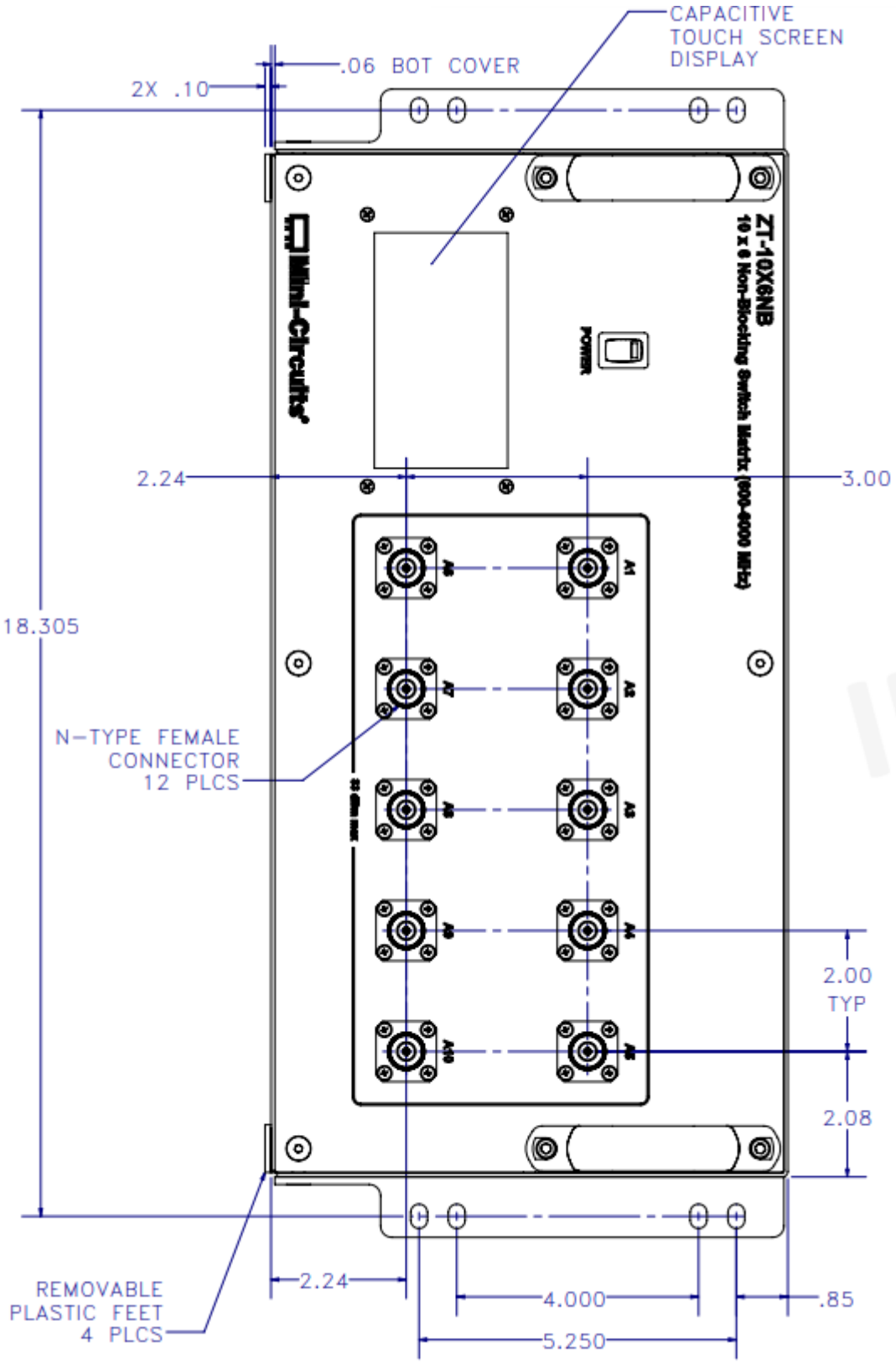


2) Main Control Screen

- Set any switch path with a single button click
- View system status including active switch paths, temperature and fan operation
- Define custom port labels for each user
- Administrator control over which switch ports are accessible to each user profile
- View system block diagram



Outline Drawing (Front Panel)



Outline Drawing (Top & Rear Panels)